

REMARKS

In accordance with the foregoing, claims 5 – 9 and 11 - 12 are amended, claims 1 - 3 are cancelled without prejudice or disclaimer, and new claims 17 – 18 are added to the application. No new matter is presented in this Amendment. Claims 4 – 15 and 17 - 18 are pending and under consideration.

Request for entry of amendments

Claim 4 is amended as an independent claim including the limitations of claim 1. Claims 5 – 9 and 11 – 12 are amended to depend from claim 4 instead of from claim 1 and new claims 17 and 18, which are identical to claims 2 and 3, except for depending from claim 4, are added to the application. Claim 15 is amended to include the limitations of original claim 16. Claim 10 is amended to correct a minor informality.

It is respectfully submitted that the amendments are directed to matters of form and do not raise new issues for consideration. In particular, claim 4 is amended as suggested by the Examiner in the present Office Action and claim 15 is amended as suggested by the Examiner in the Office Action of August 1, 2006.

Statement of substance of interview

Applicants would like to thank the Examiner for discussing the application briefly with the undersigned by telephone on January 18, 2007. The undersigned called the Examiner to inquire as to why claim 15, directed to a lithium-sulfur secondary battery, was not included in the allowed claims. The Examiner stated that she did not consider the preamble recitation of a lithium-sulfur secondary battery to be a limitation in the claim.

Rejection of claims 1 - 2, 5, 7 - 9, 14 - 15 under 35 U.S.C. §102(b) over Koshina et al. abstract

At page 2 of the Office Action, the Examiner rejected claims 1 - 2, 5, 7 - 9, 14 - 15 under 35 U.S.C. §102(b) as being anticipated by Koshina et al. (JP 2-281572, abstract). The Examiner alleged that Koshina et al. teaches a battery comprising an electrolyte containing lithium phosphate hexafluoride and alkyl ammonium salt as a support electrolyte. The Examiner further alleged that the density of LiPF_6 is 0.75 to 1.5 mol/l and that the alkyl ammonium salt is 1.0 to 2.0 mol/l.

While Applicants do not agree with this rejection, in order to expedite the allowance of subject matter that the Examiner has indicated is allowable, claim 1 - 3 are canceled without prejudice or disclaimer, claims 2 and 3 are rewritten as new claims 17 and 18 depending from claim 4, which the Examiner has indicated would be allowable if rewritten in independent form, and claims 5 - 9, and 11 - 12 are amended to also depend from claim 4. Therefore, claims 5 - 9 and 11 - 12 and new claims 17 and 18 are allowable.

The rejection with respect to claim 14 is not understood. The Examiner has indicated that claim 10 is allowable. Therefore, claim 14, which depends from claim 10, is also allowable.

In the telephone discussion noted above, the Examiner stated that claim 15 was rejected because the Examiner did not consider the preamble recitation of a lithium-sulfur secondary battery to be a limitation in the claim. While the Applicants disagree with the Examiner's interpretation, in order to expedite the allowance of the application, claim 15 is amended to recite a lithium secondary battery comprising electrolyte for use in a lithium-sulfur secondary battery, comprising an alkyl ammonium salt having a cation of the indicated Formula 1, a lithium salt, and an organic solvent and wherein the lithium secondary battery is a lithium sulfur battery. Thus, the body of the claim positively recites a lithium-sulfur battery. The result of amending claim 15 in this manner is equivalent to the result that would have been obtained by amending original claim 16 to include the limitations of claim 15. Since the Examiner indicated in the Office Action of August 1, 2006 that such an amended claim would be allowable, the amended claim 15 is therefore allowable.

Therefore, the rejection should be withdrawn.

Rejection of Claims 1 - 3, 5 - 9, 11 - 15 under 35 U.S.C. §102(b) over Brand et al. (U.S. Patent 4,753,859).

At page 3 of the Office Action, claims 1 - 3, 5 - 9, 11 - 15 were rejected under 35 U.S.C. §102(b) as being anticipated by Brand et al. (U.S. Patent 4,753,859). The Examiner alleged that Brand et al. teaches that the electrolyte can be a mixture of lithium salt and tetraalkylammonium salts. The Examiner further alleged that the lithium salts have a concentration of 0.4-0.8 molar and that the tetraalkylammonium salts have a concentration of 0.2-0.4 molar. The Examiner further alleged that the solvent can be PC, ED METHF, DEC, trig and tetrag and that an electrolyte can comprise 35PC/35EC/30Trig and 0.8 M LiAsF₆. For the following reasons, this rejection is respectfully traversed and reconsideration is requested.

As discussed above, in view of the cancellation of claims 1 – 3, the amendment of claim 4 to include the limitations of claim 1, the amendment of claims 5 – 9, and 11 – 12 to depend from claim 4 and the amendment of claim 15, claims 4 – 15 and 17 – 18 are allowable.

Therefore, the rejection should be withdrawn.

CONCLUSION:

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

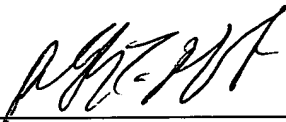
Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

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